HAZARDOUS MATERIAL RESPONSE TEAMS

Evaluation of Current and Geographical Trends To Determine Feasibility of the Establishment of a Hazardous Material Response Team in the Orange Fire Department

Strategic Management of Change

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Abstract

This study researched the problem of hazardous materials in the response area of the Orange Fire Department, both to citizens as well as to industry, and explored the possibility of the establishment of a hazardous material response team. The study's purpose was to evaluate the feasibility of the establishment of such a team within the department. Using both historical and descriptive research, a study was performed to indicate not only how other departments within the region addressed this problem, but to determine how the industrial partners within the response area of the Orange Fire Department felt about the initiation of such an effort.

The review of current literature and the utilization of both a local and regional research survey helped to determine the current status of haz-mat teams operating within our region, as well as the general feeling of the industrial partners within the response area of the Orange Fire Department for the introduction of such a team. The study shows that although currently only half of the departments in the region operate a haz-mat response team, the trend is toward establishing such a team in the near future. The climate of the local industrial partners is such that currently a clear majority favor the establishment of such a team and are interested in a participative cooperative effort where they help fund the venture.

The research questions dealt with how other fire departments in our geographic area address hazardous material incidents and whether or not they felt like the money

expended on a response unit, if they had one, would it be worth the benefit that it would provide to their response area. Additional questions asked how local industries currently handled hazardous material incidents, how they perceived a need for a local haz-mat unit and if they would be interested in a cooperative effort to establish such a team. The response indicated that almost half of the regional fire departments are currently operating a haz-mat unit and virtually all of them felt that the money expended to operate it was outweighed by the benefit that the unit provided. Three-fourths of local industries surveyed perceived a need for an haz-mat unit and the same amount stated that they would be agreeable to working in a participative cooperative effort to help fund such an unit.

The study indicates, a clear and increasing pattern of the use of hazardous materials response teams in the fire service across Southeast Texas. The research appears to show that the cost of a haz-mat response team is certainly justified by the benefits it provides. Comparing the local research findings with those of departments across the region suggests that it is time for the establishment of a hazardous material response team in the Orange Fire Department as the new millennium approaches.

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Introduction

Hazardous material incidents are almost as common as fires in today's world. There are thousands of toxic and dangerous chemicals that are used to make our everyday life better; even though we take them for granted, a spill or release of some of these materials can cause catastrophic results. The Orange Fire Department serves a population of approximately 20,000 people in Southeast Texas. Our city is traversed east to west by an interstate highway and north to south by a mainline railroad. Thousands of tons of hazardous materials are shipped through our community daily. Our city is also the home to approximately fifteen heavy industrial complexes that include petrochemical plants, papermaking companies, shipbuilding facilities, iron works, rubber producers and a deep water port authority. These facilities use, manufacture and ship hazardous materials daily as a routine. While many of these facilities have their own, in-house safety team, the Orange Fire Department has industrial district contracts with all of these agencies to provide fire protection for each of them. The revenue generated from these contracts exceeds 3.9 million dollars annually. Therefore, the relationship between the city and its industrial partners is symbiotic, in that the city needs industry to provide jobs and generate revenue, and the industries need the city to help provide fire protection for their operations. Several years ago, when OSHA passed the final ruling on confined space

safety, a group of these industrial partners contacted our department to see if we could offer a confined space rescue team to them that would meet OSHA standards. Through a

cooperative effort, the industries purchased required equipment and the city provided the personnel and trained them. Today we have a confined space and high angle rescue team comprised of 20 members, each of whom have over 140 hours of advanced rescue training, and a heavy duty rescue unit with more than $75,000 worth of equipment. This team has been in place for five years now and it has affected dozens of rescues both confined space and high angle, without a single loss of life. Recently, another group of these industrial partners has approached the department as to whether or not we could provide a hazardous material response team for their facilities.

The purpose of this research project was to analyze the need and feasibility of the establishment of a hazardous material response team within the Orange Fire Department. A descriptive research methodology was used to answer the following questions:

- How do other fire departments in this general geographic area address hazardous material incidents?
- How are hazardous material incidents in the service area of the Orange Fire Department handled at this time?
- How does the financial impact of the establishment of a response team influence the benefit received?
- Does local industry perceive a need for the establishment of a hazardous material response unit?

- Would the local industrial partners be interested in a cooperative effort with the department to support a haz-mat team if it was formed?

Background and Significance

In the late 1930s, the City of Orange, Texas was a small town of about 6,000 residents who relied on the local sawmills and shipyards for their livelihood. With the United States entering World War II, the shipyards got heavily involved in the war effort and the population rose to 60,000 within a year. Orange became a bustling community and began to attract different types of industry. As the war was drawing to a close, the petrochemical industry set its sights on Orange as a good place to locate due to the proximity of fresh water from the Sabine River and the abundance of a skilled workforce that had relocated to this area. After the war, with the population of our city stabilized at about 25,000; about a dozen petrochemical related industries had set up operations in Orange.

Through the years all of these industries have expanded and are the basis for the workforce economy of our community today. The City of Orange is located in the Southeastern most corner of the state of Texas with the Sabine River as its eastern boundary. The city is bisected east to west by Interstate Highway 10 and north to south by the Southern Pacific Railroad main line that runs from Florida to California. The combination of the exposure from the hazardous material used in the production and processing in the petrochemical plant sites and the transportation of large quantities of hazardous materials being shipped through our city on a daily basis, helps to create the possibility of a hazardous material incident or spill. A significant spill or incident could

have a devastating effect on residents as well as the economy of our area.

Five years ago, in reaction to a pending ruling from OSHA concerning the safety of personnel working in confined spaces, some of the local industry in Orange approached the Orange Fire Department inquiring as to whether or not it would be possible for the department to produce a trained rescue team to provide these confined space rescue techniques to their facilities in a timely manner. Meetings were held with all of the local industrial partners and a cooperative effort was established to provide this service to them. The cooperative effort has been in effect for five years now and has proved extremely beneficial to all involved. The department provides the trained personnel on a twenty-four hour basis; the industries provided the initial equipment purchases and pay an annual fee for the maintenance and purchase of equipment. Financially, the effort was established as a trust fund, so that all of the money donated by industry, goes directly into the rescue fund and is not spent on anything else.

In the fall of this past year, one of the local petrochemical complexes inquired about the ability of the Orange Fire Department to respond to its facility in the event of a hazardous material spill or incident. While it was explained to them that we certainly would respond and provide reactive measures to help contain the incident and affect any evacuations that may be deemed necessary, the ability to provide actual technician level hazardous material response is not available through our department at this time. Currently we provide first responder capabilities for hazardous material incidents within

the city and call for a environmental contractor if the incident requires remediation.

In the Strategic Management of Change course, some of the units dealt with changes and development within our organization as well as creativity and innovation. The research necessary to determine the feasibility of the formation of a hazardous material response team for the Orange Fire Department will reinforce these areas as well as possibly increase our perception of service diversification.

Literature Review

Hazardous materials are as much a part of our every day environment as the air that we breathe. With the availability of hazardous material within the confines of our community, on both fixed sites and within the transportation sector, the need to address the spills or incidents that result from such spills has brought about much debate. One approach to the cooperative effort of forming a team claims "Hazardous material response teams are too expensive and require more personnel than small cities have available. It's just more feasible for cities who are in the same area to join together for haz-mat response" (Cashman, 1994, pg. 66). With limited funding being the norm in the fire departments these days, it is more important than ever to prioritize programs. When five agencies reviewed their hazardous material response needs, they found that, together, they could accomplish more than any one alone. The secret to their success was the cooperative effort in training, equipment purchases and membership (Bryan, 1996).

Initially, some community and business leaders in Ohio questioned the wisdom of forming a regional haz-mat response team. While the area had experienced occasional hazardous material incidents, none had been serious enough to convince community and business leaders that here was a need for all those resources. A few incidents required spontaneous evacuations, such as ruptured tank incidents and other minor accidental releases, but while they drew media attention, they were sporadic and short lived. However, in July of 1986, a train derailed in Miamisburg, Ohio, and caused the largest

evacuation for a rail incident in this country's history. The incident could have caused massive panic and confusion had it not been for the planning and training at the regional haz-mat exercise sessions. Following the incident in Miamisburg, the region began to appreciate the benefits of the hazardous material response team and the wisdom of those who had created it (Alexander, 1990).

While cooperatives have been formed for years between industries or between public entities, only recently have they been encouraged between privately held industries and the entities of public sector governments. Both government and industry customers are giving their suppliers and distributors special incentives to improve quality. These include flat-out requirements, negative sanctions, and positive rewards. By working cooperatively, some organizations are finding that the end result improves when contractors help agencies develop the rules with which they are to live. Vendor partnership is a term for a formal system of dealing with companies offering cooperative efforts. The advantages to this approach include: improved product quality, reliable delivery performance, reduced lead time, increased vendor service, extended technical capabilities and lower product cost (Carr & Littman, 1993).

When public government entities form cooperative efforts with industry, the scenario must be a win-win one for all involved or the effort will never succeed. Therefore, for a public sector to offer a service to industry that has only been offered by the private sector in the past, it becomes a situation of not only public versus private, but

of competition versus monopoly. Where the public sector in many instances has the monopoly on such enterprise, when it starts to provide a service provided in the past by the private sector, it must be competitive. Competition will not solve all of our problems, but perhaps more that any other concept, it holds the key that will unlock the bureaucratic gridlock that hamstrings so many public agencies. The most obvious advantage of competition is greater efficiency, of "more bang for the buck." Competition also forces the vendor, whether public or private, to respond to the needs of their customers in an innovative way (Osborne& Gaebler, 1993, pg. 80).

Whether providing a hazardous material team to respond to incidents within the confines of the city or to respond to incidents within local industries or in unprotected areas of the county, the main objective is to meet the expectations of those that depend on the department to provide the service. The expectations in service situations clearly influence the perception of satisfaction. The expectations set for the department by an organization that we wish to deal with, and the way that these expectations are met, determine whether we will do business with that organization again. The leaders of an organization need to consider carefully the service expectations that they set (Albrecht & Zemke, 1990). Although this concept is not important to the local citizen as he views your efforts, to the industrial partner that has invested in your cooperative effort or is contemplating such, it is of the utmost importance.

Several issues are inherent within the formation of a hazardous material response

team. The primary issue is the response to the needs and the safety of the citizens within the community. Next is the needs of the industrial partners that help to fund the city in an effort to respond to their needs that are an inherent part of their everyday operations. Finally, but perhaps most importantly, is the need to the community itself, since the health and welfare of the entire community depend largely on the industry that supports it economically. In an effort to try to work cooperatively with industry to provide a haz-mat response team, once a company is very clear on what it will do and how, who it needs to help them accomplish this will become far more apparent (Hesselbein,Goldsmith, Beckhard, 1997). Showing industry that this local response team can not only provide the expertise needed, but has a vested interest in the outcome or success in the venture is of the utmost importance.

Without a doubt, when a haz-mat incident call comes in, the fire department will be dispatched. The evolution of cooperative hazardous material response teams has provided fire departments with reasonable, practical, and cost effective solutions to haz-mat response. In addition to providing the team members with greater access to equipment, more buying power, and increased training, the cooperative effort offers the most essential element of all: increased safety to its members (Cashman, 1994).

Procedures

Definition of Terms

Hazardous Material Response Team - an organized group of trained response personnel operating under an emergency response plan and appropriate standard operating procedures who handle and control actual or potential leaks or spills of hazardous materials requiring possible close approach to the material. The team members respond to releases or potential releases of hazardous material for the purpose of control or stabilization of the incident

Haz-Mat Team - the same as a Hazardous Materials Response Team

Hazardous Material - a substance (solid, liquid or gas) that when released is capable of creating harm to people, the environment, and property.

Industrial District Contract - a contract established between the City of Orange, Texas and an industrial entity that lies outside the city limits, where the industrial entity pays a fee in lieu of taxes (42% of the standard tax rate) in exchange for the city providing limited (police and fire) services to their facility.

Research Methodology

The research was descriptive in that a search was conducted at the Learning Resource Center of the National Fire Academy in Emmitsburg, Maryland for reference material concerning the evolution of hazardous material response teams through

cooperative efforts in the fire service. Several articles and a book were reviewed giving a basis for the historical evolution of such hazardous material response teams. The Orange Public Library in Orange, Texas yielded three literary sources that helped to complete the historical data.

Two independent surveys were conducted to further the research of this project and gather information both on a regional scale as well as a local scale. In March of 1998 a local survey was conducted among the local industries that are provided fire protection by the Orange Fire Department. In this survey, industry was asked to respond anonymously to a questionnaire and respond to the following questions:

1. Is there a possibility of your company experiencing a hazardous material spill or incident in your facility?
2. How does your facility currently handle hazardous material incidents on your site?
3. If a hazardous material response team was available through the Orange Fire Department, would you utilize the team in your facility?
4. If a hazardous material response team from the Orange Fire Department responded to an industrial or commercial incident, how do you feel that they should charge for the services provided?
5. Do you feel that your facility would be interested in supporting a cooperative effort to help fund a haz-mat response team?

6. Do you feel that the cost of such a team would be justified by the benefit it would provide?

A regional survey was conducted by sending a questionnaire to 60 departments in Southeast Texas. The departments were chosen basically at random from the *1998 National Directory of Fire Chiefs and Emergency Departments*, with an effort to include departments that had some industrial response in their area. The 60 departments that were surveyed were asked the following questions:

1. What type of department do you have?
2. How many uniformed personnel are in your department?
3. Does your department have a hazardous material response team?
4. If so, does the department charge industry or commercial customers when this team responds?
5. If so, what method is used to compute these charges?
6. Do you feel that a hazardous material response team should be a part of the services provided by the fire department either now or in the future?
7. How long have you had a haz-mat response team?
8. How many members do you have trained for the team?
9. If you do not have one, would you consider the inception of one in the future?
10. If you have one, what is the approximate annual cost to maintain?
11. If your department has a haz-mat response team, do you feel that the cost of

this unit is justified by the benefit it provides?

12. Does your local industry provide any funding or materials to help with the expense of providing the haz-mat response team?

13. (Optional) Give departmental name if you desire.

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Limitations

The local survey taken among the industries that are served by the Orange Fire Department polled 100% of these industrial partners and should represent the true opinion of the local industry at this time. However, when performing the regional survey, choosing only 60 departments from the southeast corner of our state limited the coverage that was achieved, especially since the entire Gulf Coast is heavily industrialized. In addition, since the returns were anonymous, there was no way to categorize by area of the region to see if one area responded differently from another.

Results

In the local survey conducted with all of the industrial district contract holders serviced by the Orange Fire Department during the month of March, 1998 the following results were tabulated: Eighty-five percent of the industries indicated that there was a possibility of them experiencing a hazardous materials spill or incident in their facility while 14 percent said that there was not. Thirty-three percent of those polled felt that an in-plant crew should handle a haz-mat incident, 25 percent felt that they should have a haz-mat company on contract, eight percent said that they would call a local haz-mat contractor and 33 percent indicated that they would call for a fire department response. While 75 percent of the respondents said that they would utilize a fire department team if it were available, 25 percent indicated that they would not. Seventy-five percent of the industries felt that they were interested in a cooperative effort to help fund a haz-mat response team in the department and 75 percent felt that the cost of the team would be justified by the benefit that it provided.

The regional survey of 60 departments across Southeast Texas yielded 42 respondents within six weeks after it was mailed out. This 70 percent of the original group surveyed was represented by 46 percent paid or career departments, 40 percent combination departments and 13 percent volunteer departments. Of the departments responding, 73 percent retained less than one hundred uniformed personnel, 16 percent uniformed from 100 to 300, six percent uniformed from 300 to 500 and three percent

retained over 500 uniformed personnel. Forty-seven percent of the departments responding stated that they already have a hazardous material response team and have utilized them for an overall average of eight years. While 83 percent of the departments charge industries for haz-mat responses, 41 percent of those charge on a per hour basis, 33 percent charge only to recover costs and the remainder use some other formula to collect for their response. While 52 percent of the responding departments stated that currently they do not have a haz-mat team, 76 percent felt that they should have one at this time and the remaining 23 percent felt that they would like to consider the introduction of one in the future. The average annual cost to maintain a hazardous material response team seemed to be below $10,000, with 70 percent of the respondents falling into that range. Ninety percent of the responding departments felt that the cost of the unit was justified by the benefit that it provided.

Research Question 1. The Southeast portion of Texas has been heavily industrialized since World War II. This influx of industry was due to the abundance of water for processing, economically priced property and an abundant work force. With the development of the petrochemical industry came an inordinate amount of hazardous materials that had not been prevalent before. Approximately half of the fire departments in this region of the state have recognized the problems that exist and instituted hazardous material response teams to handle the incidents that can arise from accidents involving hazardous materials. All of the departments in the area agree that even though they may

not have a hazardous material response team at this time, that this response capability should be a part of the fire service and plan to address it in the future.

Research Question 2. Currently, the local industry within the response area of the Orange Fire Department either depends on in-plant teams to handle the incident or call on the fire department for its response. The level of expertise currently maintained within the Orange Fire Department is at the operations level. The personnel are able to react as a first responder to such incidents, but then rely on local haz-mat contractors to be summonsed to the scene to remedy the situation. The problem that exists with this structure is that the response time of the local contractors is not always adequate, and sometimes this delay compounds the problems arising from the incident. A small percentage of the local industries use the same local contractors that the fire department summons to the scene and one of the local industrial partners actually has a ongoing contract with a haz-mat company to remediate any spills that they may incur. In an effort to work with industries to provide a hazardous material response unit for them, it is important to show them what you can do and how you can do it. This will be far more apparent to the facilities that actually need the unit, than to the ones that are self sufficient (Hesselbein et al., 1997).

Research Question 3. By a three to one margin, the local industries of the Orange Fire Department Response area acknowledged that they felt that the costs affiliated with the inception of a hazardous material response team would certainly be justified by the

benefit that it would provide both to industry as well as the community. With the average annual cost to operate a team within the fire departments in this region of the state totaling less than $10,000, the benefits certainly seem to outweigh the costs. One incident alone could cost many times more than this annual budget figure if the incident was not handled in a timely manner. In the past, although the wisdom of the creation of hazardous material response teams was questioned, when a incident developed and property and lives were saved, the benefits derived were appreciated (Alexander, 1990).

Research Question 4. Seventy-five percent of the local industry that was surveyed indicated that if the Orange Fire Department provided a hazardous material response team, that they would utilize the group within their facility. There are always going to be industries that provide their own remediation teams or have contracts with environmental companies for this type of work, but with this percentage of the local industrial partners interested in using the fire department team, there must be a genuine need. No doubt, the local plant managers are interested in getting "more bang for the buck" and interested in innovative approaches to their needs (Osborne & Gaebler, 1993).

Research Question 5. With the same margin of approval that the local industries endorsed the establishment of a hazardous material response team within the department, the group indicated an interest in a cooperative effort with the City of Orange to help fund and provide such a service. Another positive note in this response was that, not only were 75 percent of those polled interested in the cooperative effort, but the same amount felt

that the creation of such a team would justify the operational costs by the benefits that it provided. Through a cooperative approach with industry, the vendor partnership that is created should be able to provide improved quality, delivery performance, extended technical ability and lower product cost (Carr & Littman, 1993). When public entities form cooperative efforts with industry, there must be a win-win scenario for all involved (Osborne & Gaegler, 1993).

Discussion

Through the observation and results obtained in the regional research survey of Southeast Texas, it is apparent that almost half of the departments surveyed already have a hazardous material response team in place; they have been active for an average of eight years. Since the fire service has been very aggressive in staying on the cutting edge of technology in apparatus, equipment, and personal protective gear, it seems obvious that the need to address hazardous material is one of the priorities that many departments are looking toward addressing in the near future, if they have not already done so. Hazardous materials are not going away and the abatement of the accidents involving them is an issue that is staring the fire service "right in the eye."

There are similarities between the regional questionnaire and the local questionnaire. While only 48 percent of the regional fire departments stated that they had a hazardous materials response team at this time, 76 percent responded that they felt that they should have one and the remaining 23 percent stated that they felt that they should consider one in the future. Eighty-five percent of the local research survey of industry indicated that they could experience a hazardous material spill or accident and 75 percent indicated that they would utilize a hazardous material response team from the Orange Fire Department if it were available. This same percentage of the local respondents felt that the benefits from establishing such a team would outweigh the costs involved. The average costs to maintain a hazardous material response team seemed to be below $10,000

annually with 70 percent of the respondents falling into that category. Virtually all of the responding departments that currently fund a hazardous material response team felt that the cost was justified by the benefit it provided. The Orange Fire Department falls into the category of having between 10 and 100 uniformed personnel as did 73 percent of the regional sample surveyed. The department also has all paid or career personnel as did 46 percent of the respondents to the survey.

Historically, it appears that the Orange Fire Department is no different from many other fire departments across the nation. The department was formed in the 1870s as a fully volunteer agency to protect the fledgling community of Orange, Texas. After the turn of the century, paid personnel were added to the department in a effort to upgrade the level of service to the community and offer quicker response. World War II played a big role in the change of the Orange Fire Department as more paid personnel were hired to increase fire protection capabilities to a town that was heavily involved in the war effort of shipbuilding. The town grew considerably during the war years and after the war, in the late 1940s, the petrochemical industries began to look to Orange as a place to locate plant facilities due to the land and water resources and availability of a skilled work force. With the advent of these petrochemical industries came the hazardous materials that had not previously been a part of the community. As the need for more hazardous materials in manufacturing increased, the railway began to ship in great quantities. With the main line of the Southern Pacific Railway bisecting our town in a north/south direction, the chance

of having a haz-mat accident increased. In the early 1960s, in conjunction with the interstate highways projects across the nation, Interstate 10 was constructed, bisecting our town in an east/west direction. With the crisscrossing of an interstate highway and a mainline railroad in the City of Orange and the location of about a dozen petrochemical related industries within the response area of the Orange Fire Department, the possibility of a hazardous material incident becomes more likely by the day.

Currently, the Orange Fire Department does not have a hazardous material response team, although we are called to scenes of haz-mat incidents and either abate small spills or perform as a first responder until an environmental contractor can be contacted to respond. With the current expansion trends of local industries, it seems that in our service oriented environment, the establishment of a hazardous material response team for the Orange Fire Department could be visualized as an innovation. Regionally, no reduction in the use of a hazardous material response team anytime soon can be seen, and practically all of the departments surveyed agreed that if they were not in the business of haz-mat, they would certainly be considering it in the future. It appears through the local research survey, that the majority of the local industrial partners are ready and willing to accept the formation of a haz-mat response team for our area and are even interested in a participative cooperative program whereby they are able to help fund the project. The political climate of the department at this time seems to be of a service oriented nature; it is always expected to be able to do more for customer satisfaction. In

light of future industrial district contract negotiations between the City of Orange and its industrial district contract holders, the establishment of a haz-mat response team may be viewed as a bargaining chip. This year the department will celebrate its 40th anniversary as a career department and our local industries celebrate 50 years of existence in Orange. It may be time to initiate dialogue on whether the Orange Fire Department establishes a formal Hazardous Material Response Team for the protection of the community.

Recommendations

While it is the responsibility of each fire department across the nation to conduct its own research to determine its own needs as how to handle hazardous material incidents, an evaluation of the data in this report could prove helpful in that research. Conducting a survey of 60 departments across the heavily industrialized region of Southeast Texas and receiving information from 70 percent of these departments appears to be solid research data on the establishment and current use of hazardous material response teams in the fire service in our region.

It appears that the current industrial district contract holders within the response area of the Orange Fire Department are ready to join forces with the department to make this idea a reality. The "political winds" that are currently blowing seem to "fan the flames" of increased service to our customers, whether they be citizens or industrial partners.

With the average haz-mat response team across the region currently costing less than $10,000 annually to operate, and the majority of the local industrial partners interested in a participative cooperative effort to help fund the unit, the entire project seems fiscally possible. Even if the department had to bear the majority, if not all of the expenses, the impact on an overall annual department budget of 2.2 million dollars seems acceptable.

Given the agreement between the regional and local survey results, and the

proactive nature of the Orange Fire Department, it appears that it is time to establish a hazardous material response team. If the formation of a hazardous material response team within the Orange Fire Department has the impact on the cooperative partnership and extended customer service that was provided by our confined space rescue team in the past few years, then it will certainly be worth the effort to establish this additional protective service to the citizens and industry of the City of Orange.

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Appendix A

Regional Survey

March 16, 1998

Dear Fire Chief,

The attached survey is part of a National Fire Academy Executive Fire Officer Program research project conducted by David Frenzel, Fire Chief with the Orange Fire Department in Orange, Texas. This research project is in an effort to determine the need or probability for our Department to develop a Hazardous Material Response Team by comparing and analyzing the existence of haz-mat units in other departments in South East Texas and the desires of our current industrial partners.

YOUR PARTICIPATION IS COMPLETELY VOLUNTARY AND YOUR ANSWERS WILL REMAIN COMPLETELY CONFIDENTIAL!

The use of your Department's name is voluntary and need not be included if you so desire. The use of the enclosed stamped self-addressed envelope to return the questionnaire will insure that your response is returned directly to me.

It is important that you answer each question as it pertains to the operation in your organization. Any inquires about this project can be directed to David Frenzel at (409) 883-1050 between the hours of 7:00 AM and 5:00 PM .

Your response is very important! Thank you for your help!

Respectfully yours,

David Frenzel, Chief
Orange Fire Department

EXECUTIVE FIRE OFFICER QUESTIONNAIRE

1. Indicate the type of Fire Department you are associated with:
(circle the best answer)

   A. Paid/Career
   B. Combination
   C. Volunteer

2. How many uniformed personnel in your Department?

   A. 10-100
   B. 100-300
   C. 300-500
   D. Over 500

3. Does your Department have a Hazardous Materials Response Team?

   A. Yes
   B. No

4. If the answer to # 3 is *Yes*, does the Department charge Industry or Commercial customers when this team responds? If the answer to #3 is *No*, go to question 6.

   A. Yes
   B. No

5. If the answer to # 4 is *A(Yes)*, do you charge on a per hour basis or just to recover the cost of the materials used? If the answer is *B(No)*, go to next question.

   A. Per Hour Basis
   B. Charge only for recovery of costs of materials used
   C. Use other formula for charging

6. Do you feel that a Hazardous Materials Response Team should be part of the services provided by the Fire Department either now or in the future?

   A. Yes
   B. No
   C. Yes, In the future

7. If your Department has a Hazardous Materials Response Team, how may years has it been in operation?

   _____ Years

8. If your Department has a Hazardous Materials Response Team, how many members have you trained for the team?

   _____ Members

9. If your Department does not have a Hazardous Material Response Team, would you consider the inception of one in the future?

   A. Yes
   B. No
   C. N/A (already have a Team)

10. If your Department has a Team, what is the approximate annual cost to maintain?

    A. Under $ 5000
    B. $ 5000 - $ 10000
    C. $ 10000 - $ 50000
    D. Over $ 50000
    E. N/A (do not have a team)

11. If your Department has a Hazardous Materials Response Team, do you feel that the cost of this unit is justified by the benefit it provides?

    A. Yes
    B. No
    C. N/A (do not have a team)

12. Does your local industry provide any funding or materials to help with the expense of providing the Hazardous Materials Response Team?

    A. Yes
    B. No
    C. N/A (do not have a team)

13. Your Department Name:_____ (Optional)

Appendix B

Local Industrial Survey

March 16, 1998

Dear Industrial Safety Supervisor,

The attached survey is part of a National Fire Academy Executive Fire Officer Program research project conducted by David Frenzel, Fire Chief with the Orange Fire Department in Orange, Texas. This research project is in an effort to determine the need or probability for our Department to develop a Hazardous Material Response Team by comparing and analyzing the existence of haz-mat units in other departments in South East Texas and the desires of our current local industrial partners.

YOUR PARTICIPATION IS COMPLETELY VOLUNTARY AND YOUR ANSWERS WILL REMAIN COMPLETELY CONFIDENTIAL!

The use of the enclosed stamped self-addressed envelope to return the questionnaire will insure that your response is returned directly to me.

It is important that you answer each question as it pertains to the operation in your organization. Any inquires about this project can be directed to David Frenzel at (409) 883-1050 between the hours of 7:00 AM and 5:00 PM .

Your response is very important! Thank you for your help!

Respectfully yours,

David Frenzel, Chief
Orange Fire Department

EXECUTIVE FIRE OFFICER QUESTIONNAIRE B-2

Please circle the best answer to the following questions expressing your own opinions:

1. Is there a possibility of your Company experiencing a hazardous materials spill or incident in your facility?

   A. Yes
   B. No

2. How does your facility currently handle hazardous material incidents on your site?

   A. In-Plant Crew
   B. Haz-Mat Company on Contract
   C. Call a local Haz-Mat Contractor
   D. Call for Fire Department response

3. If a Hazardous Materials Response Team was available through the Orange Fire Department, would you utilize the team in your facility?

   A. Yes
   B. No

4. If a Hazardous Materials Response Team from the Orange Fire Department responded to an industrial or commercial incident, how do you feel that they should charge for the services provided?

   A. On A Per Hour Basis
   B. Charge only for recovery costs and materials used
   9. Use other formula for charging

10. Do you feel your facility would be interested in supporting a cooperative effort to help fund a Haz-Mat Response Team? *(Like the Confined Space Rescue Co-op)*

    A. Yes
    B. No

6. Do you feel that the cost of such a team would be justified by the benefit it would provide?

   A. Yes
   B. No

Appendix C

Survey Results

EXECUTIVE FIRE OFFICER QUESTIONNAIRE - *RESULTS* C-1

(42 surveys returned out of 60 mailed out or 70% return)

1. Indicate the type of Fire Department you are associated with:
(circle the best answer)

A.	Paid/Career	**20 or 47%**
B.	Combination	**17 or 40%**
C.	Volunteer	**5 or 13%**

2. How many uniformed personnel in your Department?

A.	10-100	**31 or 73%**
B.	100-300	**7 or 16%**
C.	300-500	**3 or 6%**
D.	Over 500	**1 or 3%**

3. Does your Department have a Hazardous Materials Response Team?

A.	Yes	**20 or 47%**
B.	No	**22 or 52%**

4. If the answer to # 3 is *Yes*, does the Department charge Industry or Commercial customers when this team responds? If the answer to #3 is *No*, go to question 6.

A.	Yes	**16 or 83%**
B.	No	**4 or 16%**

5. If the answer to # 4 is *A(Yes)*, do you charge on a per hour basis or just to recover the cost of the materials used? If the answer is *B(No)*, go to next question.

A.	Per Hour Basis	**8 or 41%**
B.	Charge only for recovery of costs of materials used	**7 or 33%**
C.	Use other formula for charging	**5 or 25%**

6. Do you feel that a Hazardous Materials Response Team should be part of the services provided by the Fire Department either now or in the future?

A.	Yes	**32 or 76%**
B.	No	**0 or 0%**
C.	Yes, In the future	**10 or 23%**

7. If your Department has a Hazardous Materials Response Team, how may years has it been in operation?

_____ Years **AVERAGE OF ALL = 8 YEARS**

10. If your Department has a Hazardous Materials Response Team, how many members have you trained for the team?

_____ Members **AVERAGE FOR ALL = 27 MEMBERS**

11. If your Department does not have a Hazardous Material Response Team, would you consider the inception of one in the future?

A. Yes **7 or 77%**
B. No **5 or 22%**
C. N/A (already have a Team)

10. If your Department has a Team, what is the approximate annual cost to maintain?

A. Under $ 5000 **7 or 35%**
B. $ 5000 - $ 10000 **7 or 35%**
C. $ 10000 - $ 50000 **4 or 20%**
D. Over $ 50000 **2 or 10%**
E. N/A (do not have a team)

11. If your Department has a Hazardous Materials Response Team, do you feel that the cost of this unit is justified by the benefit it provides?

A. Yes **18 or 90%**
B. No **2 or 10%**
C. N/A (do not have a team)

14. Does your local industry provide any funding or materials to help with the expense of providing the Hazardous Materials Response Team?

A. Yes **7 or 35%**
B. No **13 or 65%**
C. N/A (do not have a team)

15. Your Department Name:_____ (Optional)

16.

17. EXECUTIVE FIRE OFFICER QUESTIONNAIRE - *RESULTS* C-3

(14 surveys returned out of 16 mailed or 87% return)

Please circle the best answer to the following questions expressing your own opinions:

1. Is there a possibility of your Company experiencing a hazardous materials spill or incident in your facility?

   A. Yes **12 or 85%**
   B. No **2 or 14%**

2. How does your facility currently handle hazardous material incidents on your site?

   A. In-Plant Crew **4 or 33%**
   B. Haz-Mat Company on Contract **3 or 25%**
   C. Call a local Haz-Mat Contractor **1 or 8%**
   D. Call for Fire Department response **4 or 33%**

3. If a Hazardous Materials Response Team was available through the Orange Fire Department, would you utilize the team in your facility?

   A. Yes **9 or 75%**
   B. No **3 or 25%**

4. If a Hazardous Materials Response Team from the Orange Fire Department responded to an industrial or commercial incident, how do you feel that they should charge for the services provided?

   A. On A Per Hour Basis **2 or 16%**
   B. Charge only for recovery costs and materials used **5 or 41%**
   11. Use other formula for charging **5 or 41%**

12. Do you feel your facility would be interested in supporting a cooperative effort to help fund a Haz-Mat Response Team? *(Like the Confined Space Rescue Co-op)*

   A. Yes **9 or 75%**
   B. No **3 or 25%**

6. Do you feel that the cost of such a team would be justified by the benefit it would provide?

   A. Yes **9 or 75%**
   B. No **3 or 25%**